June 1, 2012

Mr. Jason Gunter
Remedial Project Manager
U.S Environmental Protection Agency
Region 7 - Superfund Branch
901 North 5th Street
Kansas City, KS 66101

Re: The Doe Run Company – Federal Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article XVII, Paragraph 73 of the Administrative Order on Consent (Docket No.VII-97-F-0009) for the referenced project and on behalf of The Doe Run Company, the progress report for the period April 1, 2012 through April 30, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,

Ty L. Morris, P.E., R.G.
Vice President

TLM/jms
Enclosure
c: Mark Nations – TDRC
Matt Wohl – TDRC (electronic only)
Martin Kator – MDNR - DSP
Kathy Rangen – MDNR - HWP
Adam Nanney – Barr Engineering

Federal Mine Tailings Site

Park Hills, Missouri

Monthly Progress Report

Period: April 1, 2012 – April 31, 2012

1. Actions Performed or Completed This Period:

a. Work continued on the task of stockpiling rock onsite. This work is focused on stockpiling trail rock, Type 1 riprap, and Type 2 riprap. These rock types are being stockpiled in two different areas. The trail rock is being stockpiled inside the fence in the Former Mill Area just to the south of the Primary Crusher / Head Frame. The other types of rock are being stockpiled in the northern portion of the Borrow Area. As of the end of the period, work on this task continued.

b. Work in the ORV Riding Area continues to be on hold while Doe Run and Missouri Department of Natural Resources – Division of State Parks (MDNR-DSP) discuss what additional measures need to be taken to secure the working areas. These discussions and the subsequent actions to secure the working areas are likely to take a majority of the next period or two to complete. At this point, Doe Run and MDNR-DSP have come to an agreement in concept of how the work areas will be secured. However, there are a few additional details to work out. It is anticipated that this will occur on or before the next progress meeting which is planned for May 7, 2012. It is anticipated that work will not resume in this area until June.

c. Work resumed on the Former Chat Pile Area. This work focused on constructing the drainage channel that runs through this area. This work included excavating mine waste and weathered bedrock from the channel to construct the channel bottom to the approved final subgrade elevations. As of the end of the period, work on this task continued.

It should be noted that a seep has developed at the base of the slope on the downstream side of the sedimentation basin located at the downstream end of the channel that runs through the Former Chat Pile Area. At this time there is not an obvious source of water for this seep and the flow has caused a small amount of erosion in the toe of this slope. Further exploration of this seep is planned.

d. Work in the Former Mill Area began on the task of constructing the interpretive walk trail through the mill. This work focused on excavating the portion of the trail between the east side of the Secondary Crusher Building and the east side of the Mill Building. This area needed to be excavated so that the final surface of the trail in this area does not block surface drainage. As of the end of the period, work on this task had been completed.

e. Work in the Former Mill Area continued on the task of covering portions of the trail with 12 inches of trail rock. This work focused on the portion of the trail from the west side of the Dorr Thickeners to the east side of the Supply House, the excavated portion of the trail from the east side of the Secondary Crusher Building to the east side of the Mill Building, and the spur that runs behind the Machine Shop to the northwest corner of the area. As of the end of the period, work on this task had been completed.

Work in the Former Mill Area also focused on covering the portions of the trail with 12 inches of trail rock between the east side of the Secondary Crusher Building and the west side of the Primary Crusher Building. As of the end of the period, work on this task was about 50 percent complete.

f. In January, EPA requested that air monitors, in addition to the monitor identified in the RAWP, be placed around the site. Doe Run and MDNR-DSP have determined how this issue will be addressed and are in the progress of implementing these activities. The first step in this process will be to identify a location for the set of air monitors (one high volume TSP particulate sampler – volumetric flow controlled and one EPA reference method high volume PM_{10} sampler – volumetric flow controlled) to be placed. It is anticipated that this step will be completed during the next period.

Doe Run also plans to utilize air monitors that are already being used in other air monitoring networks in the Park Hills area. A plan identifying the new location discussed above, as well as the existing locations they intend to utilize, will be provided to EPA once it has been finalized.

2. Data and Results Received This Period:

a. Included with this progress report are a table and two charts. These documents show the data for the MDNR-DSP air monitor located near the ORV Riding Area from January 2010 through February 2012. This information is being provided to EPA in this report as a courtesy to MDNR-DSP. Neither The Doe Run Company nor Barr Engineering were involved with siting this monitor, collecting the samples, processing the samples, evaluating the data, or verifying the accuracy of the data.

b. Also included with this progress report is a memorandum from the Missouri Department of Natural Resources – Air Pollution Control Program (MDNR – APCP). This memorandum discusses the three-month rolling average for the MDNR-DSP air monitor located near the ORV Riding Area for September 2011 and provides an analysis of the result, which was calculated to be 0.14 $\mu g/m^3$. This result is just below the National Ambient Air Quality Standard of 0.15 $\mu g/m^3$. This information is being provided to EPA in this report as a courtesy to MDNR-DSP.

c. Also included with this progress report are the monthly NPDES monitoring reports for Outfall 002 (Shaw Branch Creek discharge) for January 2012, February 2012, and March 2012. This information is being provided to EPA in this report as a courtesy to MDNR-DSP Neither The Doe Run Company nor Barr Engineering were involved with collecting the samples, processing the samples, evaluating the data, or verifying the accuracy of the data.

3. Planned Activities for Next Period:

a. Work in the ORV Riding Area will continue to be on hold until additional measures to secure the working areas in the ORV Riding Area have been taken.

b. Work will continue on the task of stockpiling trail rock, Type 1 riprap, and Type 2 riprap.

c. Work will continue on the task of constructing the walking trail in the Former Mill Area.

d. Work will continue on the task of constructing the drainage channel in the Former Chat Pile Area.

e. Exploration activities will be completed to determine the source of the seep that has developed at the base of the slope on the downstream side of the sedimentation basin located at the downstream end of the channel that runs through the Former Chat Pile Area.

f. A plan for proceeding with placing additional air monitors around the site will be developed.

g. The next MDNR-DSP progress meeting is planned for May 7, 2012.

4. Changes in Personnel:

a. None.

5. Issues or Problems Encountered and the Resolution:

a. None.

End of Monthly Progress Report

St. Joe State Park Lead, January 2010 through February 2012, ug/m3
Note· values of 0.007 (or of 0 004 starting July 2011) are generally nondetects
Note· blank cells indicate no valid sample, or insufficient data to calculate an average

Monthly Average Lead Concentrations, 2010-2012, ug/m3

	SJSP
January	0.015
February	0 009
March	0.008
April	0 021
May	0 054
June	0.033
July	0 037
August	0.033
September	0 011
October	0 052
November	0 021
December	0 032
January	0 011
February	0.007
March	
April	0.007
May	0.007
June	0.015
July	0 028
August	0 030
September	0 364
October	
November	
December	0 011
January	0 023
February	0.024

3-Month Rolling Average Lead Concentrations, 2010-2011, ug/m3

Jan-Mar	0 011	0 15
Feb-Apr	0 012	0.15
Mar-May	0.027	0.15
Apr-Jun	0 036	0 15
May-Jul	0.041	0.15
Jun-Aug	0 034	0 15
Jul-Sep	0 027	0.15
Aug-Oct	0 032	0.15
Sep-Nov	0.028	0.15
Oct-Dec	0 035	0.15
Nov-Jan	0 021	0.15
Dec-Feb	0 017	0.15
Jan-Mar		0 15
Feb-Apr		0.15
Mar-May		0 15
Apr-Jun	0 010	0.15
May-Jul	0 017	0 15
Jun-Aug	0 024	0.15

St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note· values of 0 007 (or of 0 004 starting July 2011) are generally nondetects

Note. blank cells indicate no valid sample, or insufficient data to calculate an average

Jul-Sep	0 141	0 15
Aug-Oct		0 15
Sep-Nov		0 15
Oct-Dec		0 15
Nov-Jan		0 15
Dec-Feb	0 019	0.15

Daily Average Lead Concentrations, ug/m3

	SJSP
1/2/10	0.052
1/5/10	0 019
1/8/10	0 008
1/11/10	0 007
1/14/10	0.007
1/17/10	0 007
1/20/10	0.007
1/23/10	0.007
1/26/10	0 029
1/29/10	0.007
2/1/10	0.007
2/4/10	0.007
2/7/10	0 015
2/10/10	
2/13/10	
2/16/10	
2/19/10	0.007
2/22/10	
2/25/10	
2/28/10	
3/3/10	0 011
3/6/10	
3/9/10	0.007
3/12/10	
3/15/10	0 007
3/18/10	
3/21/10	0 007
3/24/10	
3/27/10	0 007
3/30/10	
4/2/10	
4/5/10	0 007
4/8/10	0 018
4/11/10	
4/14/10	
4/17/10	
4/20/10	0 050
4/23/10	
4/26/10	0 007
4/29/10	

St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note values of 0 007 (or of 0.004 starting July 2011) are generally nondetects

Note. blank cells indicate no valid sample, or insufficient data to calculate an average

5/2/10	0.011
5/5/10	0.014
5/8/10	0 260
5/11/10	
5/14/10	0.025
5/17/10	0.007
5/20/10	0.007
5/23/10	0 049
5/26/10	0 056
5/29/10	
6/1/10	
6/4/10	0.011
6/7/10	0 028
6/10/10	0 010
6/13/10	
6/16/10	0.059
6/19/10	0 084
6/22/10	0.017
6/25/10	0.021
6/28/10	
7/1/10	0.032
7/4/10	0.052
7/7/10	0 028
7/10/10	0.108
7/13/10	0.011
7/16/10	0.024
7/19/10	0.007
7/22/10	
7/25/10	
7/28/10	
7/31/10	0 031
8/3/10	0 017
8/6/10	0 035
8/9/10	0 017
8/12/10	0.024
8/15/10	0.104
8/18/10	0.042
8/21/10	0 021
8/24/10	
8/27/10	0.032
8/30/10	0 007
9/2/10	0 007
9/5/10	
9/8/10	0 011
9/11/10	
9/14/10	
9/17/10	0 007
9/20/10	
9/23/10	0.007

St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note: values of 0 007 (or of 0 004 starting July 2011) are generally nondetects

Note: blank cells indicate no valid sample, or insufficient data to calculate an average

9/26/10	0 018
9/29/10	0 014
10/2/10	0 075
10/5/10	0.022
10/8/10	0.021
10/11/10	0 049
10/14/10	0 014
10/17/10	0 188
10/20/10	
10/23/10	
10/26/10	0 014
10/29/10	0.032
11/1/10	0.018
11/4/10	
11/7/10	0.014
11/10/10	0 011
11/13/10	0.039
11/16/10	0 061
11/19/10	0.007
11/22/10	0 007
11/25/10	
11/28/10	0.007
12/1/10	0 015
12/4/10	0.029
12/7/10	
12/10/10	0 043
12/13/10	
12/16/10	
12/19/10	
12/22/10	0 059
12/25/10	
12/28/10	0.015
12/31/10	
1/3/11	
1/6/11	
1/9/11	
1/12/11	0.007
1/15/11	0 015
1/18/11	
1/21/11	
1/24/11	
1/27/11	
1/30/11	
2/2/11	
2/5/11	
2/8/11	0.007
2/11/11	
2/14/11	0 007
2/17/11	

St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note. values of 0.007 (or of 0.004 starting July 2011) are generally nondetects

Note. blank cells indicate no valid sample, or insufficient data to calculate an average

2/20/11	
2/23/11	
2/26/11	
3/1/11	
3/4/11	
3/7/11	
3/10/11	
3/13/11	
3/16/11	
3/19/11	
3/22/11	
3/25/11	
3/28/11	
3/31/11	
4/3/11	
4/6/11	
4/9/11	
4/12/11	
4/15/11	0.007
4/18/11	
4/21/11	0 007
4/24/11	
4/27/11	0 007
4/30/11	
5/3/11	0 008
5/6/11	
5/9/11	0.007
5/12/11	
5/15/11	0 007
5/18/11	
5/21/11	0 007
5/24/11	
5/27/11	0.007
5/30/11	
6/2/11	0 012
6/5/11	
6/8/11	0 023
6/11/11	
6/14/11	0 017
6/17/11	
6/20/11	0.007
6/23/11	
6/26/11	0.014
6/29/11	
7/2/11	0 053
7/5/11	
7/8/11	0 020
7/11/11	
7/14/11	0.011

St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note: values of 0 007 (or of 0 004 starting July 2011) are generally nondetects

Note blank cells indicate no valid sample, or insufficient data to calculate an average

7/17/11	
7/20/11	0 038
7/23/11	
7/26/11	0.019
7/29/11	
8/1/11	0.014
8/4/11	
8/7/11	0 047
8/10/11	
8/13/11	0.027
8/16/11	
8/19/11	0 014
8/22/11	
8/25/11	0.054
8/28/11	
8/31/11	0 025
9/3/11	
9/6/11	0.341
9/9/11	
9/12/11	0.039
9/15/11	
9/18/11	
9/21/11	
9/24/11	
9/27/11	
9/30/11	0.712
10/3/11	
10/6/11	0 032
10/9/11	
10/12/11	
10/15/11	
10/18/11	
10/21/11	
10/24/11	0 025
10/27/11	
10/30/11	
11/2/11	
11/5/11	
11/8/11	
11/11/11	
11/14/11	
11/17/11	
11/20/11	
11/23/11	
11/26/11	0 003
11/29/11	0 008
12/2/11	0 012
12/5/11	
12/8/11	0 025

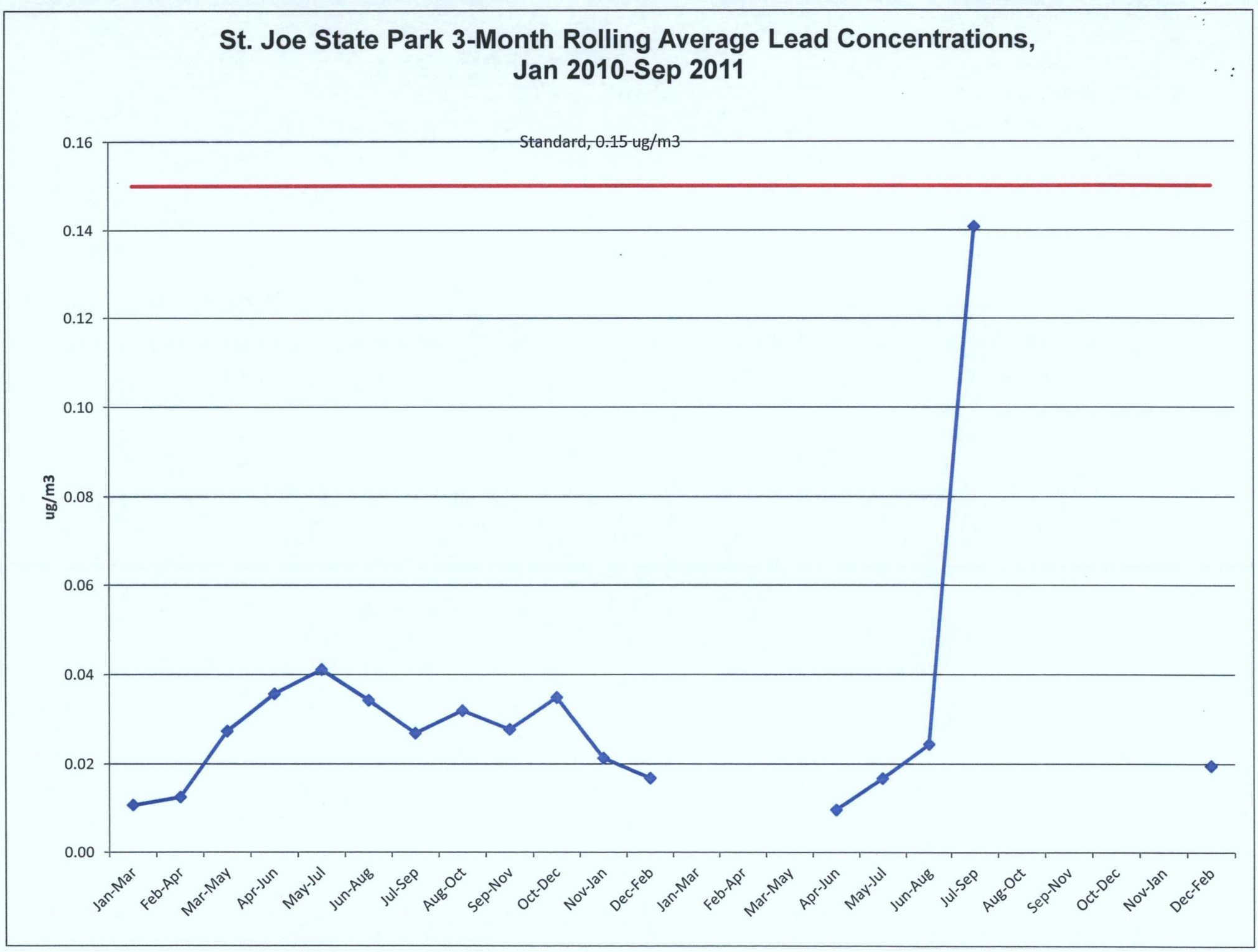
St. Joe State Park Lead, January 2010 through February 2012, ug/m3

Note: values of 0 007 (or of 0.004 starting July 2011) are generally nondetects

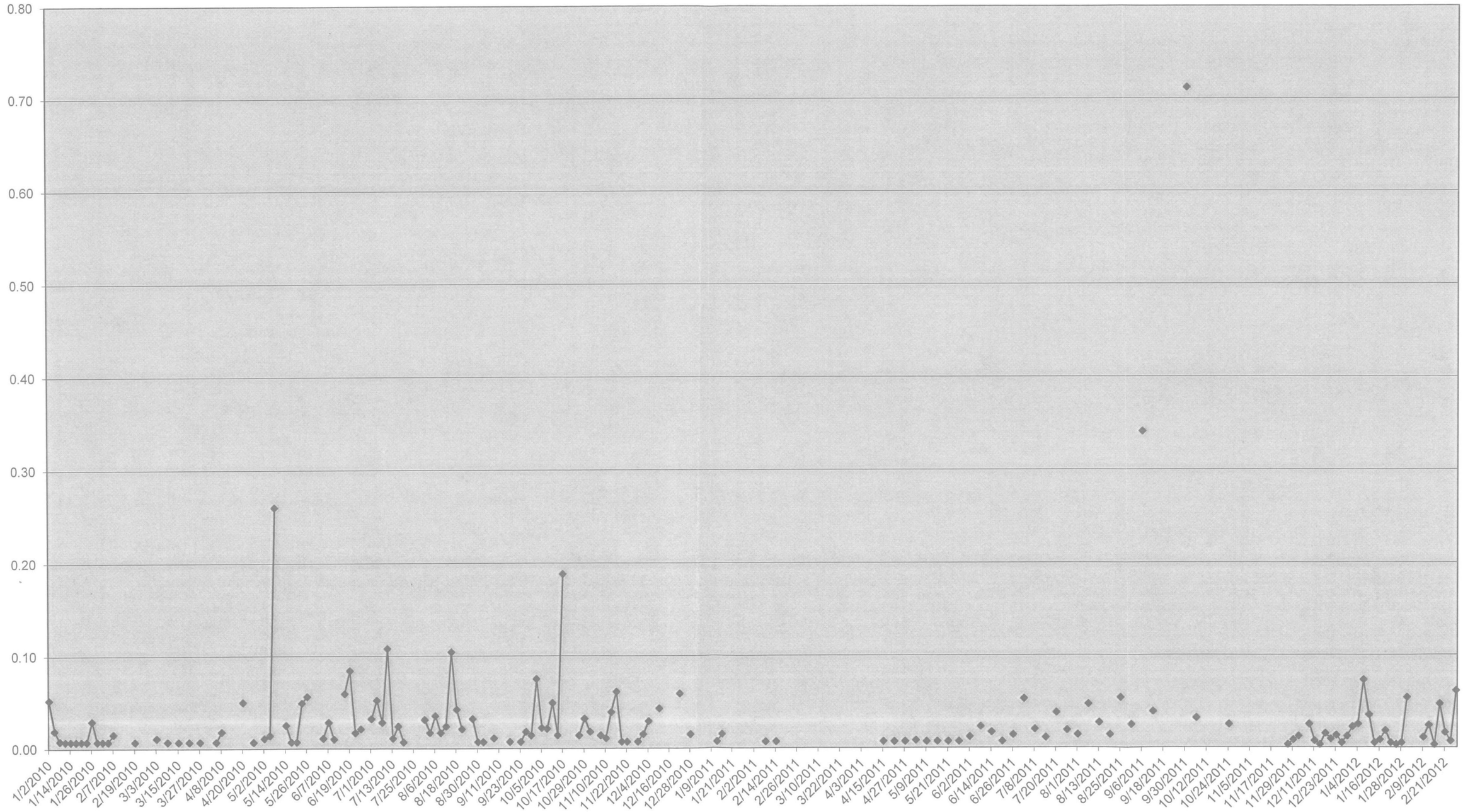
Note: blank cells indicate no valid sample, or insufficient data to calculate an average

12/11/11	0 007
12/14/11	0 003
12/17/11	0 015
12/20/11	0.009
12/23/11	0 013
12/26/11	0 005
12/29/11	0 012
1/1/12	0 022
1/4/12	0 025
1/7/12	0.073
1/10/12	0.035
1/13/12	0 005
1/16/12	0.008
1/19/12	0.018
1/22/12	0 005
1/25/12	0 003
1/28/12	0.005
1/31/12	0 054
2/3/12	
2/6/12	
2/9/12	0 011
2/12/12	0 024
2/15/12	0 003
2/18/12	0 047
2/21/12	0 016
2/24/12	0 007
2/27/12	0 061

St. Joe State Park 3-Month Rolling Average Lead Concentrations, Jan 2010-Sep 2011



SJSP Daily Average Lead Concentrations, ug/m3



Lead Episode Analysis
St. Joe State Park
September 2011

Introduction

Ambient air monitoring results at the St. Joe State Park ambient air monitoring site indicate that the September 2011 three month rolling average for airborne lead was 0.14 micrograms per cubic meter ($\mu g/m^3$). The Missouri Department of Natural Resources' (MDNR) Air Pollution Control Program (APCP) investigated potential contributions to these exceedances since this monitored three month rolling average is close to the Lead National Ambient Air Quality Standard (NAAQS) of 0.15 $\mu g/m^3$. Since the St. Joe State Park lead monitor is located in an area where meteorology and land use can be a significant factor in the production dust as total suspended particulate (TSP) several episodes have been chosen to analyze the meteorological and other factors which may have contributed to elevated 24-hour lead concentrations monitored at this site.

Site History

St. Joe State Park is in the old lead belt area near Park Hills, Missouri. The area of the park was donated to the state by the St. Joe Minerals Corporation in 1976, after lead mining in the old lead belt area ceased. The park includes 8,238 acres, approximately 2,000 acres of which are set aside for off-road vehicle (ORV) riding. About 900-1,000 acres within the park are tailings, crushed dolomite remaining from past milling of lead ore. The tailings area within the park is known as the Federal Tailings Pile. About 800 acres of the tailings are within the ORV area. Lead emissions from areas in the Park are not quantified in emissions inventories. However, windblown dust and/or dust raised by ORV activities are a potential source of airborne lead in and near the Park. Figure 1 is an aerial photograph of the St. Joe State Park area in which the tailings area and ORV trails may be seen.

An Environmental Evaluation Cost Analysis (EECA) for remediation of areas within the Park has been drafted, and a work plan will be developed in the future that will include covering areas with greater than 600 parts per million lead in the soil. In addition, areas open to ORV activity may be modified in the future.[1]

The Missouri Department of Health and Senior Services (DHSS) evaluated lead exposure scenarios at the park. The results of this evaluation and resulting advisories are posted on the MDNR Division of State Parks website:
http://mostateparks.com/advisory/58335/lead-information-st-joe-state-park.

The State of Missouri began operating at TSP Lead monitor in St. Joe State Park to assess concentrations of airborne lead in ambient air on November 27, 2009, on a site adjacent to an area frequently subject to ORV activity (Figure 1). It should be noted that this area of the park is without a permanent source of commercial electrical service and the lead sampler is powered by an innovative solar power and propane generator backup system. As with many new innovated custom systems, there have been some technical difficulties

[1] Missouri Lead Monitoring Network Plan, Air Pollution Control Program, October 2009.

which prevented the system from sampling on the EPA 1 in 6 day NAAQS sampling schedule. The department is making modifications to this system to improve reliability and ensure data completeness requirements are met in subsequent sampling periods.

Figure 1

Meteorological Synopsis

Meteorological data used in this report were obtained from the National Weather Service at Farmington Airport and pollution rose graphs were produced by data obtained from the Bonne Terre MDNR Ambient Air monitoring Site. Both meteorological sites are relatively close to the St. Joe State Park monitor and are sufficient to monitor the predominant meteorological conditions for each of the 24-hour sampling events.

Daily Analysis

September 6, 2011

On Tuesday September 6, 2011 the predominant wind direction included a northerly wind component with average wind speeds ranging from 10 miles per hour to 12 miles per hour with gusts up to 20 miles per hour.

September 30, 2011

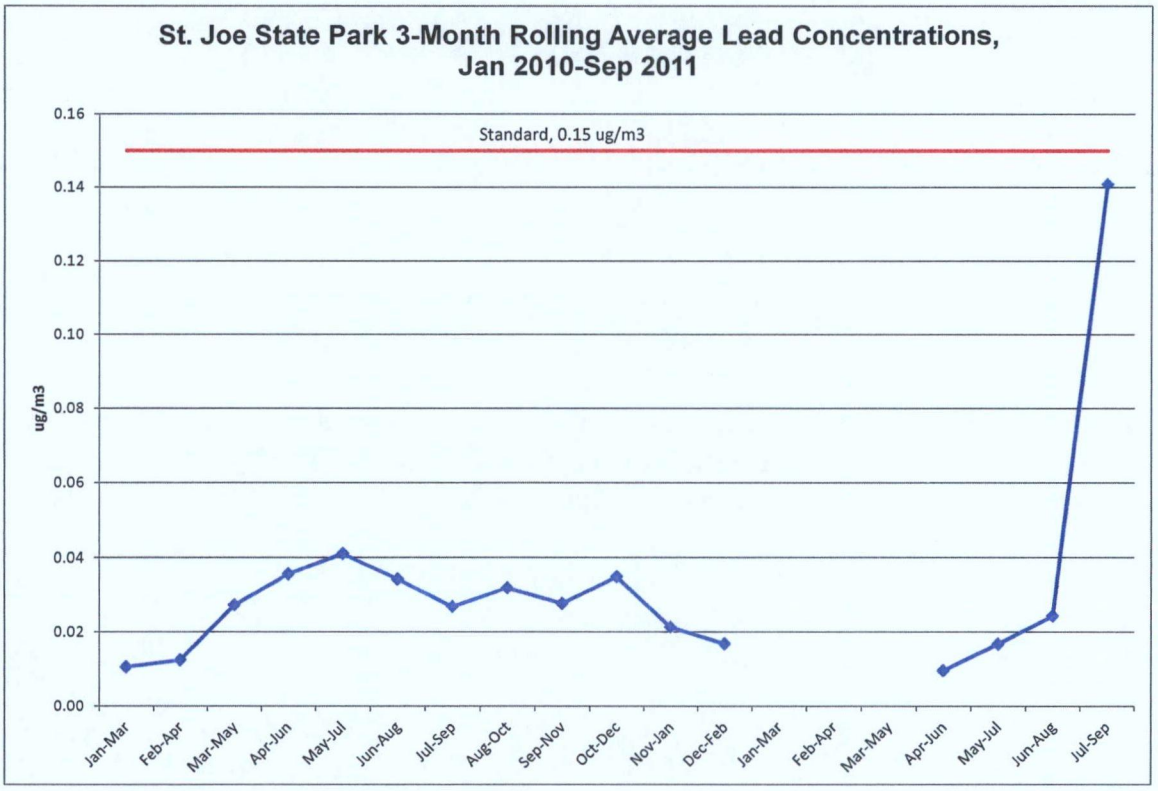
On Friday September 30, 2011 the predominant wind direction included northwesterly component at 10 miles per hour gusting to 23 miles per hour.

Closing Remarks Concerning Meteorology

The Monitoring data and ORV summary table below tabulates meteorological data for the seven days where the highest 24-hour airborne lead concentrations have been monitored. Qualitatively, the correlation between the predominant wind direction is stronger than for other parameters including wind speed, relative humidity and ambient temperature.

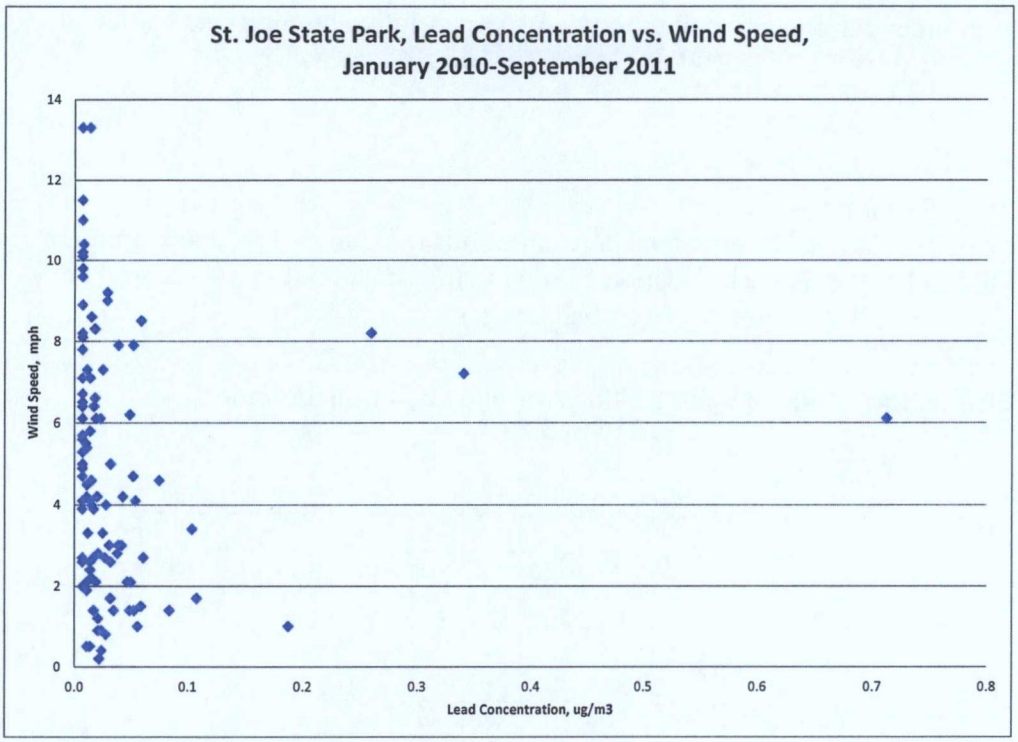
Monitoring Data Summary

Three-month rolling average airborne lead concentrations measured at St. Joe State Park are shown in the following figure. The increase due to the concentrations measured on the two subject days in September 2011 can be clearly seen in the figure.

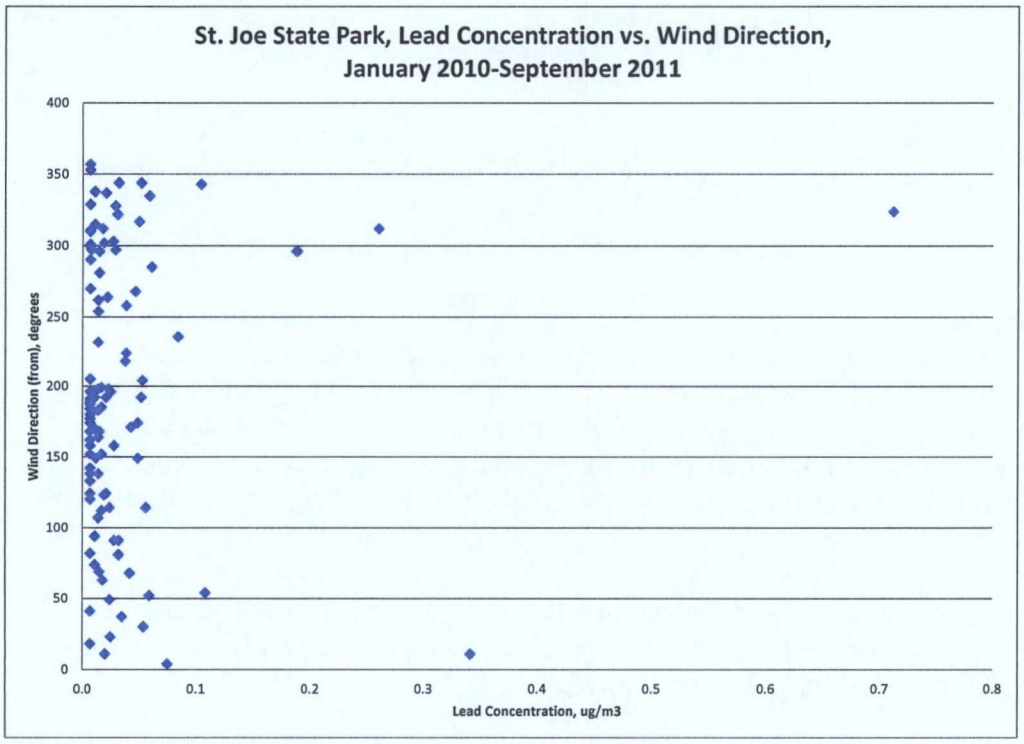


The APCP staff reviewed the St. Joe State Park lead monitoring data since monitoring began on November 27, 2009, looking for any trends in monitored ambient air concentrations of lead and other local variables including 24-hour average wind speed, maximum hourly average wind speed, 24-hour average wind direction, seasonal concentration variations, and park use data. The 24-hour average airborne lead concentrations measured on the two subject days in September 2011, and the highest five concentrations measured previously are listed in the table "Monitoring Data & Park ORV Summary" below.

Lead concentration vs. average wind speed for all measurement days during January 2010 through September 2011 are shown in the following figure. The higher concentrations were generally measured on days with moderately high wind speeds.



Lead concentration vs. average wind direction for all measurement days during January 2010 through September 2011 are shown in the following figure. The higher concentrations were generally measured on days with average direction from the northwest to north.



State Park ORV Permit Data Summary

The MDNR Division of State Parks Staff tabulated the ORV permit data for seven of the dates when the highest airborne lead concentrations were monitored and shared this information with APCP staff. The number of ORV Permits issue by the state park is generally greater on the weekends and special event days than the number of permits issued during weekdays. The ORV permit data does not yield any information concerning the ORV density in any particular area of the ORV terrain network nor does it indicate any particular time during the 24-hour sampling period when ORV activity was highest.

ORV permit numbers were relatively high on the five previous high concentration days, but not on the subject days in September.

Monitoring Data & Park ORV Summary

Date	24-hour Airborne Lead Concentration $\mu g/m^3$	ORV Permits Issued	Sky Condition	Ambient Temperature (Deg. F)	Relative Humidity (%RH)	Average and Maximum Wind Speed (miles per hour)
5/8/2010 (Sat)	.260	544	PARTLY CLOUDY	52	48	NW 12 MAX 24
6/19/2010 (Sat)	.084	293	PARTLY CLOUDY	78	76	WSW 5 MAX NNW 18
7/10/2010 (Sat)	.108	328	PARTLY CLOUDY	76	67	ENE 3 MAX NE 8
8/15/2010 (Sun)	.104	300	PARTLY CLOUDY	83	78	NNW 5 MAX NW 10
10/17/2010 (Sun)	.188	399	CLEAR	63	59	WNW 3 MAX NW 10

9/6/2011 (Tue)	.341	33	CLEAR	60	52	N 10 MAX 20
9/30/2011 (Fri)	.712	138	CLEAR	60	44	NW 10 MAX 23

Meteorological data was obtained from the U.S. Department of Commerce National Oceanic & Atmospheric Administration for the Farmington Missouri Regional Airport.

Wind rose graphs for each of the seven days are listed in Appendix 1.

Superfund Remediation Summary

The APCP contacted the US EPA and the MDNR Superfund Section Project managers to ascertain what remediation activities were occurring at the park on September 6, and September 30, 2011. Information gleaned from this inquiry indicates that remediation activities were occurring in the Shaw Branch Creek dam spillway area located near the northwest portion of the site and Highway 32 consistent with the Scope of the Remedial Action Work Plan.[2]

The Remedial Action Work Plan relies on the MDNR St. Joe State Park lead monitor to demonstrate compliance with the lead NAAQS. MDNR Superfund and EPA Superfund staff have been notified of these monitoring results.

Conclusion

There appears to be no direct cause associated with the elevated lead concentration monitored on September 6, and September 30, 2011, at the St. Joe State Park ambient air monitoring site. However, the monitored concentrations are higher than those observed in past years under similar meteorological conditions and when there were more registered park ORV trail users.

Since the park area will be undergoing remediation over the next several months, the Monitoring Unit staff recommend continuing the lead monitoring at the St. Joe State park monitor on a 1 in 3 day sampling schedule to assess whether or not significant ambient air lead concentrations are occurring on days other than the EPA every 1 in 6 day sampling schedule. More frequent sampling may provide a larger data set to help determine if there are correlations between the typical park use, remediation activity and the airborne lead concentrations.

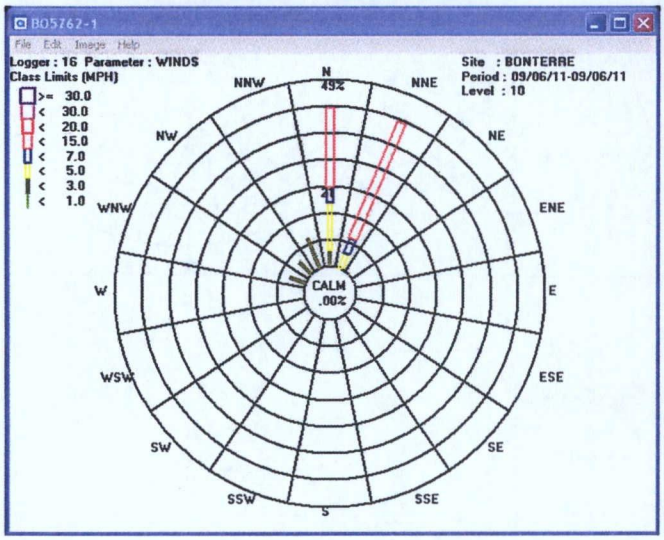
[2] Removal Action Work Plan, Federal Mine Tailings Site, Park Hills, Missouri, Doe Run Company, Barr Engineering, July 2011.

Appendix 1

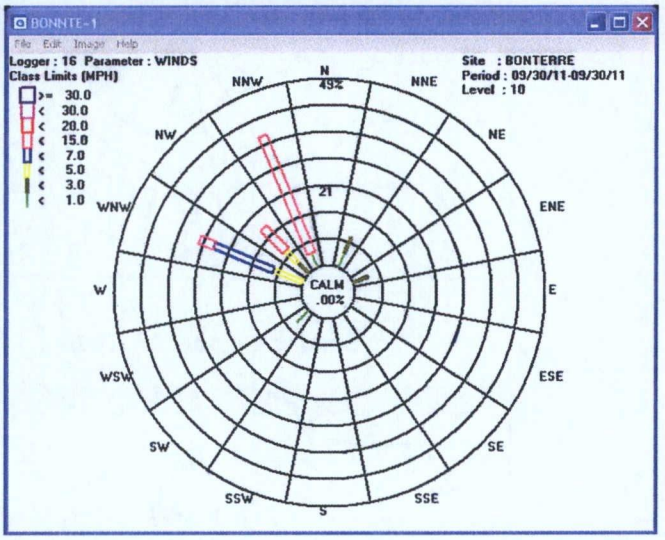
Wind Rose

Preliminary Meteorological Data was obtained from the Bonne Terre State Air Monitoring Site AQS # 29-186-0005, 15709 Highway D, Bonne Terre, MO

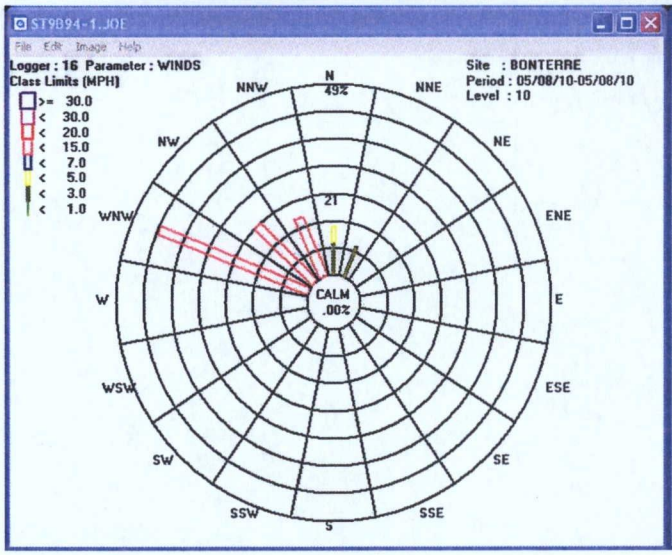
Tuesday, September 6, 2011



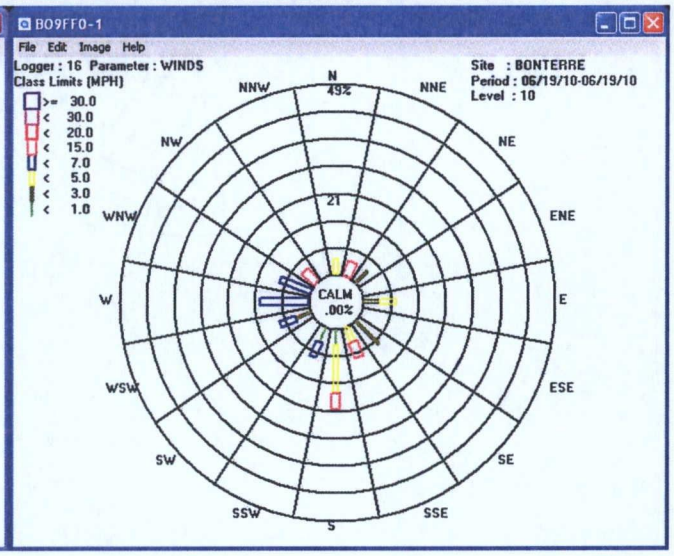
Friday, September 30, 2011



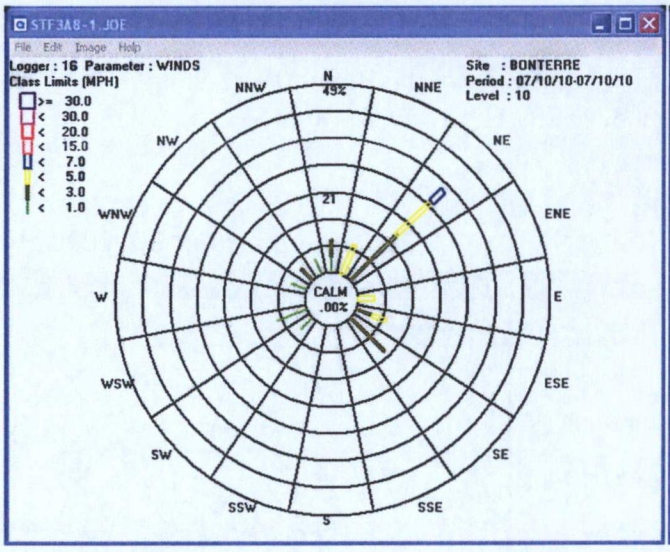
Saturday, May 8, 2010



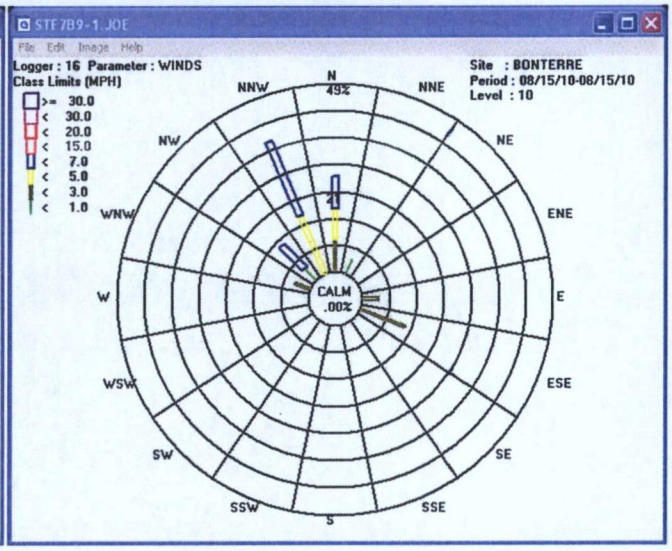
Saturday, June 19, 2010



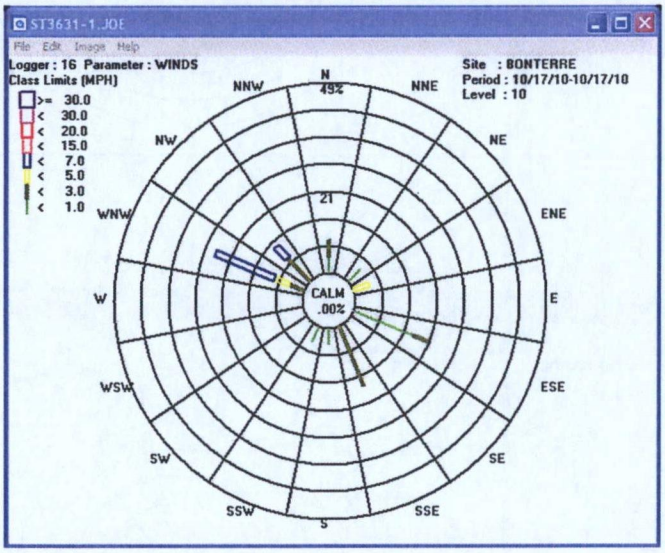
Saturday, July 10, 2010



Sunday, May 8, 2010



Sunday, October 17, 2010



MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FORM
Monthly Sampling – Monthly Reporting

MDNR, ST. JOE STATE PARK MO-0097993 ST. FRANCOIS COUNTY	Owner Address: Missouri Dept. of Natural Res PO Box 176 Jefferson City, Missouri 65102	Address Change for Owner: ☐ Billing ☐	Facility Address. MDNR/St Joe State Park 2800 Pimville Road Park Hills, Missouri 63601

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate month reporting.**

January	February	March	April	May	June	July	August	September	October	November	December
X											
NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☑
Due Feb. 28th	Due March 28th	Due April 28th	Due May 28th	Due June 28th	Due July 28th	Due August 28th	Due Sep. 28th	Due Oct. 28th	Due Nov. 28th	Due Dec. 28th	Due Jan. 28th

Samples Collected By: S McCain	Phone 573.431.1069	Analyses Performed by (LAB). Environmental Analysis South, Inc., 4000 East Jackson Blvd, Jackson, MO 63755 — Phone: 573.204 8817

Outfall #: 002

PARAMETER	UNIT	PERMITTED FINAL LIMITS DAILY MAX	WEEKLY MAX	MONTHLY AVG	SAMPLE 1 DATE COLLECTED 1/26/2012 TIME COLLECTED 1430 Hours	SAMPLE 1 ANALYSIS DATE Please See Attachment	SAMPLE 2 DATE COLLECTED / TIME COLLECTED	SAMPLE 2 ANALYSIS DATE	AVERAGE OF SAMPLES IF TAKEN IN SAME MONTH	SAMPLE TYPE	ANALYTICAL METHOD
Cadmium, TR	ug/L	17		17						Grab	
FLOW	MGD	*		*						24 hr estimate	
Lead, TR	ug/L	29		29						Grab	
PH	SU	***		***						Grab	
Settleable Solids	ml/L	1.0		1.0						Grab	
Total Suspended Solids	mg/L	10		10						Grab	

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT Sandra L McCain	DATE 2/26/2012	PHONE NUMBER 573.431.1069	EMAIL ADDRESS st.joe.state.park@dnr.mo.gov
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Sandra L McCain	DATE 2/26/2012	PHONE NUMBER 573.431.1069	EMAIL ADDRESS. st.joe.state.park@dnr.mo.gov

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

Return form to. Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd
Poplar Bluff MO 63901

* - Monitor and Report

*** - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

entered 5/2

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number: 116136

Report of Analysis

Reference: The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136.

Log Number:	Sample Description:	Sample Date:	Sample Received Date:
1408006	Outfall #002	1/26/2012	1/27/2012

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
pH Measurement	8.04	S.U.	SM-4500-H B-00	T1/T2	01/27/12	133

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	PDC	02/02/12	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		01/30/12	SCS

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Settleable Solids	< 0.5	ml/L/hr	SM-2540 F-97		01/27/12	119
Suspended Solids	124	mg/L	SM-2540 D-97		01/31/12	133

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Cadmium	< 0.003	mg/L	SM-3111 B-99		02/16/12	133
Lead by ICP	0.45	mg/L	EPA-200.7 Rev. 4.4	PDC	02/02/12	
Zinc	0.215	mg/L	SM-3111 B-99		02/16/12	133

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number: 116136

Report of Analysis

Respectfully submitted,

David F. Warren

Comments:

PDC	This parameter or group of analytes was analyzed by the subcontracting lab - PDC Lab Saint Louis, MO
T1/T2	Sample received out of recommended holding times./Parameter analyzed out of recommended holding times.

1161 04

Environmental Analysis South
4000 East Jackson Blvd. * Jackson, MO 63755
Telephone (573) 204-8817 * Fax (573) 204-8818

CHAIN OF CUSTODY RECORD

ST. JOE STATE PARK

Client. _____

Sampler's Signature Sandra L McCain

Address: 2800 Pinville Rd

Date. 1-26-2012 Time: 1430 Hrs ☐ See Table

City/State/Zip: Park Hills, MO 63601

Additional Comments: Flow 288,000 GPD

PO Number: _____ ☐ Rush Requested (Due Date: _____)

EAS Log Number	Sample Description	Containers			# of Bottles	Sample Matrix				Analysis																		
		Type*	Size	Preserv**		Water	Soil	Sludge	Other	TRCD PB ZN		SETT	TSS	pH			*ship											
1408006	OF#002	P	500	N	1					X																		
		P	1L	I	1							X																
		P	1L	I	1								X	X														
					(3)																							

*Container Code. P = Plastic V = VOA Vial C = Cube G = Glass A = Glass Amber

**Preservative Code: I = Iced F = Filtered N = Nitric Acid H = Hydrochloric Acid S = Sodium Hydroxide O = Sulfuric Acid T = Sodium Thiosulfate X = Other

Relinquished by	Date	Time	Received by.	Date	Time	Carrier
Sandra L McCain (Sealed)	1-26-2012	1500 Hrs				
Relinquished by: (Sealed)	Date	Time	Received by:	Date	Time	Carrier
				1/29/12	1055	RS

Revised June 29, 1999

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FORM
Monthly Sampling – Monthly Reporting

MDNR, ST. JOE STATE PARK **MO-0097993** **ST. FRANCOIS COUNTY**	Owner Address. Missouri Dept. of Natural Res. PO Box 176 Jefferson City, Missouri 65102	Address Change for Owner: ☐ Billing ☐	Facility Address: MDNR/St. Joe State Park 2800 Pimville Road Park Hills, Missouri 63601

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate month reporting.**

January	February	March	April	May	June	July	August	September	October	November	December
	X										
NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐
Due Feb. 28th	Due March 28th	Due April 28th	Due May 28th	Due June 28th	Due July 28th	Due August 28th	Due Sep. 28th	Due Oct. 28th	Due Nov. 28th	Due Dec. 28th	Due Jan 28th

Samples Collected By. S McCain	Phone. 573.431 1069	Analyses Performed by (LAB) Environmental Analysis South, Inc., 4000 East Jackson Blvd, Jackson, MO 63755	Phone: 573.204 8817

Outfall #: 002

PARAMETER	UNIT	PERMITTED FINAL LIMITS DAILY MAX	WEEKLY MAX	MONTHLY AVG	SAMPLE 1 DATE COLLECTED 2/16/2012 TIME COLLECTED 0915 Hours	SAMPLE 1 ANALYSIS DATE Please See Attachment	SAMPLE 2 DATE COLLECTED / TIME COLLECTED	SAMPLE 2 ANALYSIS DATE	AVERAGE OF SAMPLES IF TAKEN IN SAME MONTH	SAMPLE TYPE	ANALYTICAL METHOD
Cadmium, TR	ug/L	17		17						Grab	
FLOW	MGD	*		*	Please					24 hr estimate	
Lead, TR	ug/L	29		29	See					Grab	
PH	SU	***		***	Attachments					Grab	
Seuleable Solids	mL/L	1 0		1 0						Grab	
Total Suspended Solids	mg/L	10		10						Grab	

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS
S McCain	3/25/2012	573.431.1069	st.joe.state.park@dnr.mo.gov
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	**DATE**	**PHONE NUMBER**	**EMAIL ADDRESS:**
S McCain	3/25/2012	573.431.1069	st.joe.state.park@dnr.mo.gov

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd
Poplar Bluff MO 63901

* - Monitor and Report

*** - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number: 116360

Report of Analysis

Reference: The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136.

Log Number:	Sample Description:	Sample Date:	Sample Received Date:
1409216	Outfall #002	2/16/2012	2/17/2012

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
pH Measurement	8.08	S.U.	SM-4500-H B-00		02/17/12	102

Miscellaneous

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Flow Estimate	72000	GPD	Volume/Time	CA	02/16/12	

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	PDC	03/01/12	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		02/27/12	133

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Settleable Solids	< 0.5	ml/L/hr	SM-2540 F-97		02/17/12	102
Suspended Solids	24	mg/L	SM-2540 D-97		02/21/12	102

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Cadmium	< 0.003	mg/L	SM-3111 B-99		03/06/12	133
Lead by ICP	0.14	mg/L	EPA-200.7 Rev. 4.4	PDC	03/01/12	
Zinc	0.305	mg/L	SM-3111 B-99		03/06/12	133

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number. 116360

Report of Analysis

Respectfully submitted,

David F. Warren

Comments:

CA	Analysis for this parameter was performed by the client in the field and the result provided to the lab to be included on the final report.
PDC	This parameter or group of analytes was analyzed by the subcontracting lab - PDC Lab Saint Louis, MO

1163 60

Environmental Analysis South
4000 East Jackson Blvd. * Jackson, MO 63755
Telephone (573) 204-8817 * Fax (573) 204-8818

CHAIN OF CUSTODY RECORD

ST. JOE STATE PARK

Client: _____

Address: 2800 Pimville Rd

City/State/Zip: Park Hills, MO 63601

PO Number: _____ ☐ Rush Requested (Due Date: _____)

Sampler's Signature: Sandra L McCain

Date: 2/16/2012 Time: 0915 Hrs ☐ See Table

Additional Comments: Flow: 72,000 GPD

EAS Log Number	MONTHLY Sample Description	Containers: Type*	Size	Preserv**	# of Bottles	Sample Matrix: Water	Soil	Sludge	Other	Analysis: TRCD PB ZN	SETT	TSS	PH		FLOW
1409216	OF#002	P	500	N	1					X					
		P	1L	I	1						X				
		P	1L	I	1							X	X		
					(3)										

*Container Code: P = Plastic V= VOA Vial C = Cube G = Glass A = Glass Amber

**Preservative Code: I = Iced F = Filtered N = Nitric Acid H = Hydrochloric Acid S = Sodium Hydroxide O = Sulfuric Acid T = Sodium Thiosulfate X = Other

Relinquished by	Date	Time	Received by:	Date	Time	Carrier
Sandra L McCain, Sealed	2/16/2012	1000 Hrs.				
Relinquished by: , Sealed	Date	Time	Received by:	Date: 2/17/12	Time: 1050	Carrier: UPS

Revised June 29, 1999

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FORM
Monthly Sampling – Monthly Reporting

MDNR, ST. JOE STATE PARK **MO-0097993** **ST. FRANCOIS COUNTY**	Owner Address: Missouri Dept. of Natural Res PO Box 176 Jefferson City, Missouri 65102	Address Change for Owner ☐ Billing ☐ 	Facility Address: MDNR/St. Joe State Park 2800 Pimville Road Park Hills, Missouri 63601

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate month reporting.**

January	February	March	April	May	June	July	August	September	October	November	December
		X									
NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐	NO DISCHARGE ☐
Due Feb. 28th	Due March 28th	Due April 28th	Due May 28th	Due June 28th	Due July 28th	Due August 28th	Due Sep. 28th	Due Oct. 28th	Due Nov. 28th	Due Dec. 28th	Due Jan. 28th

Samples Collected By: S. McCain	Phone: 573.431 1069	Analyses Performed by (LAB): Environmental Analysis South, Inc., 4000 East Jackson Blvd, Jackson, MO 63755	Phone: 573.204 8817

Outfall # 002

PARAMETER	UNIT	PERMITTED FINAL LIMITS			SAMPLE 1		SAMPLE 2		AVERAGE OF SAMPLES IF TAKEN IN SAME MONTH	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY MAX	MONTHLY AVG	DATE COLLECTED 3/19/2012 TIME COLLECTED 1120 Hours	ANALYSIS DATE Please See Attachment	DATE COLLECTED TIME COLLECTED	ANALYSIS DATE			
Cadmium, TR	ug/L	17		17						Grab	
FLOW	MGD	*		*	Please					24 hr estimate	
Lead, TR	ug/L	29		29	See					Grab	
PH	SU	***		***	Attachments					Grab	
Settleable Solids	mL/L	10		10						Grab	
Total Suspended Solids	mg/L	10		10						Grab	

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS
Sandra L McCain	4/18/2012	573.431.1069	st.joe.state.park@dnr.mo.gov
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	**DATE**	**PHONE NUMBER**	**EMAIL ADDRESS**
Sandra L McCain	4/18/2012	573.431.1069	st.joe.state.park@dnr.mo.gov

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd
Poplar Bluff MO 63901

* - Monitor and Report

*** - pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number: 116715

Report of Analysis

Reference: The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136.

Log Number: 1411031
Sample Description: Outfall #002
Sample Date: 3/19/2012
Sample Received Date: 3/20/2012

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
pH Measurement	7.46	S.U.	SM-4500-H B-00	T1/T2	03/20/12	133

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	PDC	03/22/12	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		03/20/12	133

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Settleable Solids	< 0.5	ml/L/hr	SM-2540 F-97		03/20/12	133
Suspended Solids	41	mg/L	SM-2540 D-97		03/22/12	133

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Cadmium	< 0.003	mg/L	SM-3111 B-99		03/22/12	133
Lead by ICP	0.36	mg/L	EPA-200.7 Rev. 4.4	PDC	03/22/12	
Zinc	0.184	mg/L	SM-3111 B-99		03/22/12	133

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Bill Bonnell
St. Joe State Park
2800 Pimville Road
Park Hills, MO 63601

Report Number: 116715

Report of Analysis

Respectfully submitted,

David F. Warren

Comments:

PDC	This parameter or group of analytes was analyzed by the subcontracting lab - PDC Lab Saint Louis, MO
T1/T2	Sample received out of recommended holding times./Parameter analyzed out of recommended holding times.

116715

Environmental Analysis South
4000 East Jackson Blvd. * Jackson, MO 63755
Telephone (573) 204-8817 * Fax (573) 204-8818

CHAIN OF CUSTODY RECORD

ST. JOE STATE PARK

Client: _____

Sampler's Signature: Sandra L McCain

Address: 2800 Pinville Rd

Date: 3/19/2012 Time: 1120 Hrs ☐ See Table

City/State/Zip: Park Hills, Mo 63601

Additional Comments: Flow [illegible] MM
1,728,000 GPD

PO Number: _____ ☐ Rush Requested (Due Date: by April 10 2012)

EAS Log Number	MONTHLY Sample Description	Containers Type*	Size	Preserv**	# of Bottles	Sample Matrix Water	Soil	Sludge	Other	Analysis TRCD PB ZN	SETT	TSS	PH		FLOW										
1411031	OF#002	P	500	N	1					X															
		P	1L	I	1						X														
		P	1L	I	1							X	X												
					3																				

*Container Code: P = Plastic V= VOA Vial C = Cube G = Glass A = Glass Amber
**Preservative Code. I = Iced F = Filtered N = Nitric Acid H = Hydrochloric Acid S = Sodium Hydroxide O = Sulfuric Acid T = Sodium Thiosulfate X = Other

Relinquished by	Date	Time	Received by:	Date	Time	Carrier
Sandra L McCain	3/19/2012	~~1210~~ 12:10 PM				
Relinquished by:	Date	Time	Received by:	Date	Time	Carrier
				3/20/12	1120	UPS

Revised June 29, 1999